'ECOmise it': EBV Elektronik Presents Latest Update on EuP-Regulation Regarding 'Electric Motors and Circulators'

Minimum EU Requirements on Energy Efficiency

by Dr. Norbert Reintjes, Ökopol GmbH/EuP Consultant EBV Elektronik, October 2009

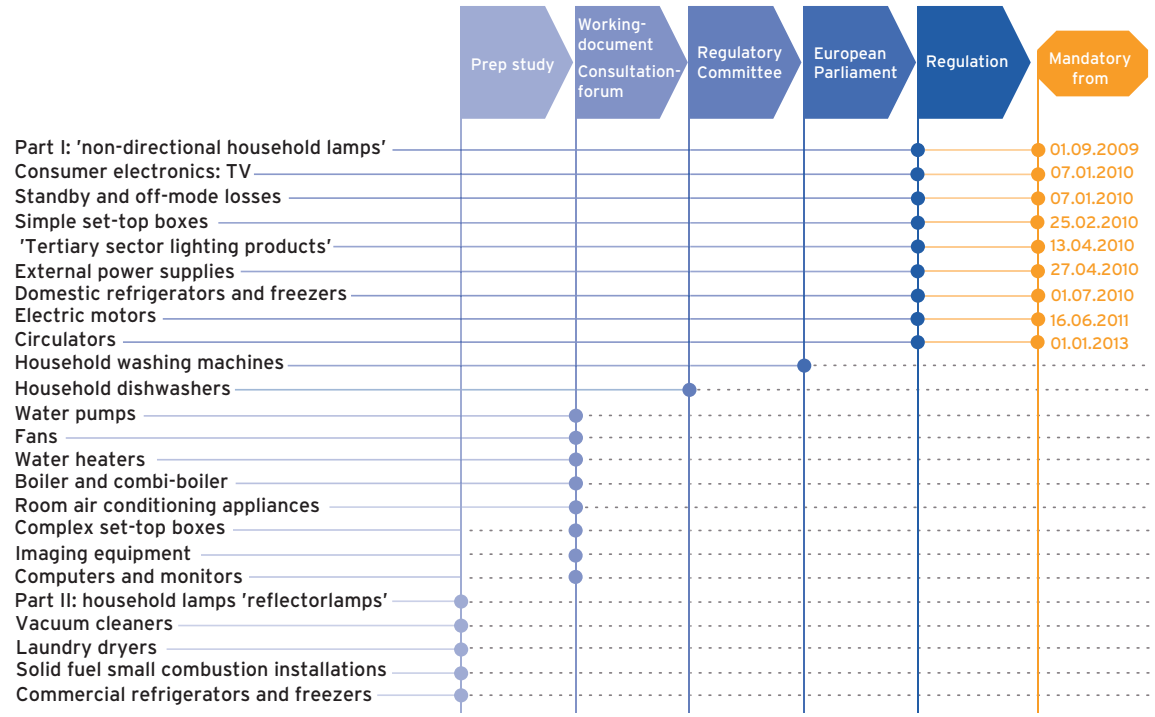
Electric motors

EU Regulation no. 640/200 addresses electric motors, which are widely used, particularly in industrial drive systems. It (only) covers single-speed three-phase 50 Hz or 50/60 Hz squirrel-cage rotor induction motors if they are 2- to 6-pole motors, have a rated voltage of up to 1,000 V and a rated output of between 0.75 and 375 kW and are designed for continuous operation. The Regulation defines squirrel-cage motors as electric motors without brushes, commutators, slip-rings or electrical connections with the rotor.

It is particularly important to remember that this definition also covers motors installed in other products, although this does not include motors that are fully integrated in a product (e.g. a gearbox, pump, fan or compressor) and whose energy efficiency cannot be recorded independently of this product. Motors that are designed to be operated while fully immersed in a liquid or those that are specially designed for use under specific external conditions are also excluded from the energy efficiency requirements. Brake motors (i.e. motors that are equipped with an electromechanical braking unit that acts directly on the drive shaft without couplings) are not included either.

Speed control is rewarded

The Regulation stipulates a range of requirements regarding the product data, although its primary aim is to limit the amount of energy consumed by electric motors while they are in use. As of 16 June 2011, motors that are placed on the EU market must comply with energy efficiency class IE2.
As of 1 January 2015, motors with a rated output of 7.5 - 375 kW and, as of 1 January 2017, smaller motors with a rated output starting at 0.75 kW, must comply with energy efficiency class IE3 as a requirement for placement on the European market. However, if the motors are equipped with a speed controller, IE2 remains sufficient. This concession



Status quo of processing the various product groups (status: October 2009)

for motors equipped with speed controllers acknowledges the fact that major energy-saving potential can be achieved by means of the electronic motor control (depending on the drive system).

Circulators

In parallel with the Regulation for electric motors, the EU Commission has issued EU Regulation no. 641/2009 for circulating pumps. Circulating pumps are mainly used to circulate heat carriers in heating systems and use a significant proportion of energy required for heating buildings. Furthermore, most common circulating pumps operate continuously and irrespective of the actual heat demand. It is estimated that around 14 million circulating pumps are placed on the EU market each year.

This Regulation also focuses on energy-efficiency requirements. With the exception of circulating pumps for solar heating systems and heat pumps, external circulating pumps must, as of January 2013, comply with the values stipulated in the Regulation. As of August 2015, these requirements apply to all external and internal circulating pumps.

In-built products also affected

As with the other Regulations issued as part of the ecological design Directive, compliance with the Regulations is the responsibility of the company placing the product on the EU market (i.e. the manufacturer in Europe or the importer). Since motors and circulating pumps installed in other products are explicitly affected too, importers of industrial machines, for example, may also be completely bound by the relevant Regulation. By awarding the CE mark, manufacturers declare that the product complies with the Regulation. Manufacturers must ensure that they obtain the documents specified in the Regulation so that they can be used for conformity assessments and market surveillance purposes.

In parallel with the Regulations described here, the EU Commission has also issued Regulations covering televisions as well as household refrigerators and freezers. This means that binding minimum standards for a total of nine product groups have been defined in the form of legally-binding EU Regulations as part of the implementation of the Ecodesign or EuP Directive. Further Regulations are in preparation.

Regulation	(EU) 640/2009	(EU) 641/2009
Date of publication	23th July 2009	
Came into force on	12th August 2009	
Effective	16th June 2011	1st January 2013
Scope	Electric motors	Circulators
Area of applicability	Average efficiency during operation	

Schedule, scope and area of applicability of Regulations 640/2009 and 641/2009

A comprehensive description of the Ecodesign Directive (InfoClick number 290966) and a description of Regulations concerning the stand-by and off-mode consumption of electrical/electronic household and office devices (1275/2008), simple set-top boxes (107/2009), external power supplies (278/2009) as well as products for commercial lighting (245/2009) and household lighting (244/2009) appeared in a series of articles supported by EBV Elektronik.

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